

## TEST REPORT

### No. 30-10802/T

**Product:** Hot-water boiler burning wood pellets  
(with automatic fuel supply)

**Type designation:** ORLIGNO 500

**Customer:** EKO-VIMAR ORLAŃSKI Sp. Z o.o.  
ul. Nyska 17b  
48-385 Otmuchów  
Poland

**Manufacturer:** EKO-VIMAR ORLAŃSKI Sp. Z o.o.  
ul. Nyska 17b  
48-385 Otmuchów  
Poland

**Employee responsible  
for inspection and  
evaluation:** Ing. Stanislav Buchta

**Report issue date:** 2010-07-26

**Distribution list:** 1 copy to the Engineering Test Institute  
1 copy to the Customer

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The results of tests and assessment only apply to the products tested.

(\*\*) The parts of the Report marked with a double asterisk comprise findings verified otherwise than by tests according to

ČSN EN ISO/IEC 17025





This Report was processed pursuant to Order B-37348 of 2010-05-06, Contract B-37348/30 of 2010-05-17 and Contract Supplement 1. The Report reproduces the results of tests specified in Report No. 30-7271/T of 2008-04-10 and 30-7001/T of 2007-05-31.

### **I. Product description, intended use and application**

The ORLIGNO 500 hot-water boiler with a rated capacity of 25 kW is designed for the central heating of small buildings. Wood pellets with the diameter of 6-8 mm and a length of 10-50 mm are the required fuel.

The boiler consists of a boiler body, a burner and a hopper with a capacity allowing for a long-term operation of the boiler without a need for human intervention. Fuel is supplied to the burner by two screw conveyors connected to the burner body. Combustion air is supplied by a blower. The boiler body is made of metal-sheets in the form of a weldment. The boiler is regulated by a control unit situated on the front side of the boiler.

The boiler body is thermally insulated from the outside with mineral felt inserted under the metal-sheet covers of the external cladding of the boiler.

The electronic regulation includes a JUMO temperature limiter, type 602031/80 (CE 0036).

Basic technical specifications:

Size	Rated capacity [kW]	Water volume [l]	Max. operating temperature [°C]	Max. operating pressure [bar]	Weight [kg]
ORLIGNO 500	25	60	90	2.5	300

### **II. Sample tested**

Visual inspection, tests, and evaluation were conducted on a sample identified as follows:  
ORLIGNO 500, prototype, EKV No 0211.10.13633.000

The visual inspection, testing, verification and evaluation were conducted at the Boiler and Industrial Heating Equipment Test Station of the Engineering Test Institute in Brno, in 05/2010 - 07/2010, by Milan Holomek, test engineer.

### **III. Measuring and testing equipment**

No.	Description	Inventory number	Calibration valid until	Precision
1.	Recorder, Therm 3280-8M	02-2153	05/2011	see Calibration Sheet 080120
2.	Humidity meter, thermometer	11-6258	11/2012	see Calibration Sheet 7630F/09
3.	Barometer	11-2541	11/2013	see Calibration Sheet 613-KL-K011-08
4.	Chronometer	18-2507	02/2011	see Calibration Sheet 0248E-06



**IV. Results of tests and assessment**

1.**	Accompanying technical documentation	ČSN EN 303-5:2000, Art. 8, 8.1, 8.2 ČSN 06 1008:1997, Art. 12.2	Page 4 ÷ 6		+
2.**	Product data, marking	ČSN EN 303-5:2000, Art. 7, 7.1, 7.2	Page 7		+
3.**	Construction and design	ČSN EN 303-5:2000, Art. 4.1.1, 4.1.3.4, 4.1.5.1 ÷ 4.1.5.8, 4.1.5.11, 4.1.5.11.1, 4.1.5.11.2, 4.1.5.12, 4.1.5.13, 4.1.5.14.2, 4.1.5.15	Page 8÷11		+
4.**	Material, surface finish	ČSN EN 303-5:2000, Art. 4.1.1, 4.1.2.1, 4.1.3.3	Page 12		+
5.	Test of strength and tightness of pressurized components	ČSN EN 303-5:2000, Art. 5.4.1, 5.4.2	Page 13	+	
6.	Test of surface temperatures	ČSN EN 303-5:2000, Art. 4.2.7	Page 14 ÷ 16	+	
7.	Test of heat capacity, input and efficiency; Test of combustion product temperature	ČSN EN 303-5:2000 Art. 4.2, 4.2.1 ÷ 4.2.5, 5.8.2	Page 17÷20	+	
		ČSN EN 303-5:2000, Annex A, Deviation A.1.1	Page 21	+	
8.	Combustion efficiency test - emissions	ČSN EN 303-5:2000, Art. 4.2.6	Page 22	+	
		ČSN EN 303-5:2000 Annex A (deviations A.1.2, A.2 and A.5)	A.1.2 Page 23	0	
			A. 2 Page 24	0	
		A. 5 Page 25	0		
9.	Test of tightness of combustion product ducts	ČSN EN 303-5:2000 Art. 4.1.5.10		0	
10.	Test of control, regulation and security elements	ČSN EN 303-5:2000 Art. 5.13	Page 26	+	

Note:

No.:

(\*\*) Not a test.

Evaluation:

+ Requirement fulfilled.  
- Requirement not fulfilled.  
x Not assessed.  
0 Not applicable.



Requirement assessed: **Accompanying technical documentation**

Requirement specification: ČSN EN 303-5:2000, Art. 8, 8.1, 8.2; ČSN 06 1008:1997, Art. 12.2

Sample assessed: ORLIGNO 500

**Evaluation results:** see the table below

Requirement	Requirement specification	Evaluation	Note
<b><i>Content of accompanying technical documentation</i></b>			
The documentation specified below must be available for each boiler in the corresponding language of the country of destination. Documents in accordance with Art. 8.1 and 8.2 must be supplied with each boiler.	ČSN EN 303-5:2000, Art. 8	+	
<p>Technical information and installation instructions These documents must contain at least the following particulars:</p> <ul style="list-style-type: none"> <li>- Required draught (mbar)</li> <li>- Water capacity (litres)</li> <li>- Outlet temperature of combustion products at the rated and minimum heat capacity (°C)</li> <li>- Outlet mass flow rate of the combustion products at the rated and minimum heat capacity (kg/s)</li> <li>- Flue connecting dimension (mm)</li> <li>- Boiler hydraulic loss (mbar)</li> <li>- Rated heat capacity and regulating range of the heat capacity for each fuel type (kW)</li> <li>- Boiler class</li> <li>- Burning time for each fuel type at QN (hours)</li> <li>- Temperature control range (°C)</li> <li>- Minimum inlet water temperature at the boiler supply water connection (°C)</li> <li>- Fuel type, water content in the fuel, fuel size</li> <li>- Volume of the fuel duct in litres and dimensions of the feeding hole (mm)</li> <li>- Required accumulation reservoir in litres if <math>Q_{min} &gt; 0.3 Q_a</math></li> <li>- Requirements for auxiliary power input (W)</li> <li>- Cold water temperature and pressure in bar for the safety heat exchanger</li> <li>- Electrical connections including boiler switch-off and power supply</li> </ul> <p>The installation instructions must contain the following particulars:</p> <ul style="list-style-type: none"> <li>- Assembly of the boiler at the point of operation (if necessary) and the required water testing pressure in accordance with 5.4.2 or 5.5.2.2</li> <li>- Installation procedure</li> <li>- Boiler commissioning incl. information about the boiler capacity, which must be set within the regulation range of heat capacities</li> <li>- Information concerning the placement of the probes of the control, measuring and safety equipment</li> </ul>	ČSN EN 303-5:2000, Art. 8.1	<ul style="list-style-type: none"> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>0</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>+</li> <li>0</li> <li>+</li> <li>+</li> <li>+</li> <li>0</li> </ul>	